THE

# HORTICULTURAL REGISTER,

AND

## GARDENER'S MAGAZINE.

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### Art. I.—*On the Nurseries in the Vicinity of Boston.*

Mr Editor,—If you will permit me to use your valuable publication, for this communication, and, it may be, for some further remarks hereafter, it is my intention to lay before your readers a few observations made on the Nurseries in the vicinity of of Boston in the autumn of the year 1837. So far as my memorandums and memory will serve me, at the present moment, the following is an outline of the establishment of my respected friend, Mr William Kenrick, at Nonantum Hill, Newton.

The Nursery of Mr William Kenrick is west of Boston; distance about five miles. It is chiefly devoted to the cultivation of fine fruit and hardy ornamental trees, shrubs, roses, and herbaceous plants. About 25 acres (out of 60 acres which constitutes the establishment,) are at present appropriated to the purposes named. This lot is chiefly situated on a hill; which, from its exposure on all sides to winds, is much less liable to be affected by the influence of the late frosts of spring, or the early frost of autumn, than the low grounds. Trees thus exposed to the winds, from every quarter, are rendered hardy; and are the better prepared to withstand the effects of a change of climate, whether they be sent to the east, or to the west, to the north, or to the south.

I understood Mr Kenrick to say, that upwards of 60,000 trees

had been inoculated in his nursery during the past year. At the time of my visit, I found some six or eight persons employed in budding seedling peach trees. The buds, the hands were then using, I found by the tallies, were from bearing trees, and from sources to be depended upon. This is as it should be. The want of proper attention, on the part of nurserymen, has heretofore been fraught with disappointment, and the loss of much time to the cultivator. To be certain that we have the right varieties, when we *commence planting*, is a foundation on which we may safely build our hopes of *future success*. A small stock, warranted true to its name, and in fine health, and vigorous growth, is worth a dozen *doubtful* and scrubby trees. The method Mr Kenrick has adopted to register the different varieties of all his plants, appears to me a very good one. The nurserymen generally, at least in this section of the country, have of late years used every precaution, in their power, to prevent mistakes. I mention this fact, as many of my friends and neighbors have gone "further and fared worse," when they sent their orders to persons unknown to them, except by catalogue. Several hundred trees, of the different kinds and varieties of fruit, have been set out at suitable distances, by Mr Kenrick, for the purpose of producing specimens in order to *prove* the *new kinds;* a few of which are cultivated for sale.

Upwards of two hundred varieties of choice *Pears*, lately received from the garden of Professor Van Mons, of Flanders, and from the garden of the London Horticultural Societies, at Cheswick; are now under cultivation by Mr Kenrick. Other fine sorts are expected during the present season.

The varieties of the Apples, of the Cherry, and of the Peach, are on a large scale. Mr Kenrick has, it appears to me, ransacked the orchards of Europe and America, for good things. His selections are choice; yet very extensive. Gentlemen who are about to commence, or to extend the cultivation of fruits, may here make a selection of much, if not all, that is valuable in the orchard and garden.

Another portion of the grounds, are devoted to the cultivation of beautiful and hardy ornamental trees, shrubs, and *roses;*

> "Which at God's word in beauteous Eden grew;
> Queen of the flowers that made *that orchard* gay,
> The morning blushes of the spring's new day."

Additions, of the most choice kinds, are, I understand, yearly made to this department. Several varieties of the Mulberry — suitable for silk worms — are cultivated on an extensive scale, particularly the Morus multicaulis.

Among the herbaceous plants I noticed a fine collection of Pæonies ; containing most, if not all, the *best* kinds. This is a class of plants worthy the cultivation and attention of the lover of flowers. This part of Mr Kenrick's establishment, may be the subject of some remarks at a future time.

I would here, were it my province so to do, made some suggestions for the improvements in the immediate vicinity of the mansion, which is situated on the rising grouud, by a short and winding avenue from the road. The proprietor will please pardon me for making the above remark. He has done much to improve his grounds, and, if I do not greatly mistake, he will — I judge from hints dropped by himself — do much more.

From the summit of the hill, in the rear of the mansion, you have a fine view of the city of Boston to the east ; and a delightful prospect over a diversified country on all sides. The citizens of, and strangers visiting, Boston, would do well to take a ride across the Milldam to Newton, and fill their lungs with pure, fresh air, on a summer's morning, when the " Sun is but half an hour high " — here they would realize the lines of Douglass when they should call to memory their visit to Nonantum hill.

" Dew drops, little diamonds hung on every tree,
And sprinkled silvery lustre o'er the lea ;
And all the verdurous herbage of the ground
Was decked with pearls which cast a splendor round ;
The flowers, the buds, and every plant that grew
Sipp'd the fresh fragrance of the morning dew."

*Roxbury, January* 19, 1838. S. W.

## Art. II. — *Experimental Farm and Garden.*

Within a few years, the science and art of useful and ornamental cultivation, have become subjects of general inquiry and attention, throughout the United States; not only by practical farmers and gardeners, but by statesmen and legislators, the illustrious in letters, and the enlightened and patriotic, in all the diversified professions and occupations, in which our enterprising citizens have been engaged. Precept and example have combined to extend information, and excite a passion for the noblest employment, in which man can labor; for it is from the earth, that he derives food and raiment, as well as the comforts and luxuries of his existence, both physical and intellectual.

The industrious arts and navigation are the vigorous offspring of agriculture, the secondary means of perfecting, increasing and rendering available, the products and interesting developments of rural labor, genius and taste; but it is the teeming and exhaustless earth, which furnishes the materials for the works of the mechanic, the construction of the vast fleets of commerce, and chiefly, the rich lading, which they transport, from one hemisphere to another. The acorns planted by Evelyn, in the reign of Charles II. supplied the timber for that navy, whose thunders were so triumphantly directed by a Collingwood and a Nelson; and the immortal author of Marmion and Waverley, when embellishing his extensive grounds at Abbotsford, with forest trees, ingenuously declared, that besides the immediate gratification, which that most interesting of all his employments afforded, he could not but acknowledge, that he was stimulated in his exertions, from the reflection, that it was possible, his groves might furnish the ribs of oak, for some future squadron, which would rival the victories of Aboukir and Trafalgar.

All the nations of antiquity, as well as those of modern times, most distinguished for their advancement in civilization, attained their grandeur from the resources of agriculture. The husbandman furnished the *materiel*, as well as the *personel* of armies; and monarchs have been powerful, in proportion to the prolificness of the soil, over which their sceptres extended.

So much does the true and practical independence of nations—the increase of their population, happiness and wealth, depend on the indigenous means of support, that it is only when the supply is

augmented, to meet the general demand, and increases with a rapidity equal to that of the inhabitants, that they may be considered, as in a flourishing and progressive condition.

Why is it then, it may be asked, that improvements in agriculture have always remained in the rear of the other great branches of art? Jovellanos,* a distinguished Spanish author, has assigned the reason. "Because it is an art more difficult to be carried on, and requires more knowledge and understanding, than those which admit of greater division; for it is, in fact, much less an art, than an admirable reunion of several of the most distinguished arts."

Before the reign of Elizabeth, England was mainly dependent upon France, Holland, and other nations for bread and clothing; but that talented and energetic queen, and her royal successors,—especially after the revolution of 1668,—gave such an impulse to agriculture, by a bounty on the exportation of wheat, and other encouragements, that the cereal grains soon became staples of exchange for foreign articles of trade; and the woollen manufacturers were so abundantly supplied with the native raw material, that they were enabled, not only to meet the demand for home consumption, but have, ever since, made nearly the whole earth tributary to them, for their various, innumerable and beautiful fabrics. Indeed, the history of the agriculture of Great Britain, since the middle of the seventeenth century, reveals the causes of her mechanical, manufacturing and commercial prosperity,—of her wealth, power and grandeur. It is the universal diffusion of intelligence, among the cultivators and proprietors of the soil, which has rendered that island more productive, and its whole surface more beautiful, than any portion of the globe,—which has covered its hills, plains and valleys, with well-tilled fields, luxuriant gardens, and magnificent villas.

While Bacon, Locke and Newton enlarged the bounds of exalted philosophy, and Watt and Arkwright facilitated the labors of the artist, by their wonderful mechanical inventions, Evelyn, Sinclair, Young, Coke, and Knight, with a host of zealous compatriots,—cheered on by nobles, princes and sovereigns, came forth, as the illustrious apostles of husbandry; and announced to the shepherd and the ploughman, that their vocation was among the most useful

* His excellent work, on the Agriculture of Spain, was published in French in 1806.

and honorable of the realm; and from the baronial castle to the cottage, the mighty influence of their teaching and example, has been conspicuously evinced,—thus fully establishing the correctness of an axiom of Davenant, one of the earliest writers on political economy, "that the real and effectual riches of a country, are its native products." *

So general and emphatic is the inclination and taste throughout England, for a residence in the country, that no one lives in a large city, except for the purpose of acquiring the means to become a proprietor of land; and it may be truly said, that the dear and proper home of an Englishman, whether noble or commoner, is under his own roof-tree, in the midst of green fields and majestic groves. It matters not, why, or where, he may have been compelled to adventure, for fortune or honors; whether amidst the tumults of London, and iron din of Birmingham, or in distant colonies,—on the ocean, or in the battle field, he is animated, encouraged and cheered on in his arduous and perilous career, by the fond hope, that he shall, one day, be restored to the venerable mansion of his ancestors; or enjoy the quiet of a cottage, in some well remembered "blissful haunt" of his youth, when—

> "High over hills and low adown the dale,
> He wandered many a wood, and measur'd many a vale."

It was in the midst of such a country-loving people, that experiments were eagerly made, by the wealthy, enlightened and patriotic, either for enriching the land, perfecting the implements and modes of tillage, or improving the breeds of sheep, cattle, horses and other domestic animals; while others with equal zeal were successfully engaged, in developing the capabilities of the soil and climate, for the introduction and multiplication of the varieties of culinary vegetables, fruits, flowers and other plants, in the different useful and ornamental departments of horticulture. Besides these very efficient means of diffusing information, numerous agricultural and horticultural societies were established, by whose generous and active co-operation, a knowledge of the science and art of farming and gardening has been universally disseminated; and now there is scarcely a county or large town, that has not its experimental or botanical garden, as well as extensive nurseries and plantations, of

* His "Discourses on the trade, of England," was printed in 1668.

all kinds of fruit, forest and ornamental trees, shrubs, flowers and every kind of useful vegetable production, which can be reared in the open air, or under the protection of Walls, Green-houses, Stoves, Conservatories and Vineries.

Like causes and measures have produced the same happy results in portions of France, Holland, Belgium, Germany, Italy, and even Russia; and it becomes our duty to profit by these examples. It is not expected that the practical operations of the large land owners, or that those dearly cherished rural propensities, and that long cultivated taste, which have embellished the scenery, and given a general aspect of comfort, ease and substantial happiness, to the great mass of the people of England and Scotland, can be immediately emulated in this country. We are, as yet, not sufficiently sensible to the grandeur, and beauties of the works of nature, or ambitious of that dignified independence and honorable distinction, which a spacious, and well tilled farm would confer on the proprietor; so far from it, there is a too general proclivity and custom among the rich and the educated, to hold the country in such terror or contempt, that they either avoid, or gladly flee from it, to congregate in the thronged emporiums of commerce; rather than seek, like Sallust and Cicero, Washington and Madison, Webster and Clay, Scott and Wilson, true domestic peace, manly exercise, exalted occupation and intellectual enjoyment, on the borders of some of our spacious bays, noble rivers, romantic mountain streams, or numerous forest embowered lakes. Still those other and efficient means, which have been so beneficially employed in Europe, should be adopted here; for they are admirably calculated to awaken a vigorous spirit of inquiry, create a deeper interest for those exalted pursuits, which they are intended to illustrate, effect an amelioration of condition among the hardy sons and thrifty daughters of Massachusetts, and exert a powerful and salutary influence, on all the branches of rustic industry, throughout New England.

The Massachusetts Agricultural Society, with those of the several counties, have done much, to advance the great object for which they were formed, and the Horticultural Society has more than answered the expectations of its founders; but to fulfil all the conditions of such institutions, an extensive Experimental Farm and Garden are indispensable, which shall embrace most of the advantages of those, of a like character, that have been successfully es-

tablished, in many of the European nations,—either by individual enterprise, liberal associations, or regal patronage.

The Experimental Gardens of the London and Caledonian Horticultural Societies of Chiswick and Inverleith, the Jardin des Plants, in Paris,—which is more than seventy acres in extent, the Institute Royal Horticole, at Fromont, the School of Rural Economy, at Alfort, and the National Farm, at Rambouillet, have been deservedly celebrated, as among the most useful institutions of modern times. The invaluable nurseries of Professor Van Mons at Brussels and Louvain, for creating new varieties of fruits from the seed, have verified a novel and most important theory in vegetable reproduction, and established a memorable epoch in the history of arboriculture. The Botanical Gardens of Chelsea, Cambridge, Oxford, Liverpool, Glasgow, Edinburgh and Dublin, and those of Leyden, Florence, Vienna, St. Petersburg, and Moscow, are well known for the great advantages, which the countries in which they are situated, have derived from them; and the facilities they have afforded for the acquisition and diffusion of intelligence, upon all subjects connected with the vegetable realm.

The best model of an Experimental Garden, and School of Instruction, is that at Fromont in France. It was founded in 1829, by the Chevalier Soulange Bodin—one of the most eminent horticultural authors and practical cultivators of the age. The Garden is at Ris, in the Department of Sein et Oise, and contains about one hundred and thirty acres of land. It embraces the study and knowledge of all plants reared in nurseries and gardens;—their multiplication and their application, both to our wants and our pleasures. Lectures are delivered and illustrated on botany and physiology, as applicable to horticulture;—the culture of fruit, forest and ornamental trees, culinary and other plants, indigenous and exotic;—and the theory and composition of landscape gardens. To complete the studies, there is a library, a cabinet of demonstrative instruments, models, implements, and an herbary. For the practical studies and employments,—besides the various labors of the grounds, which are performed by the pupils, there are groups of plantations, for the experimental operations of the Forest and Pomological Departments, and for the examination and verification of the species, and variety of fruits, and the comparison and management of forest trees.

The pupils are admitted at fifteen, and remain from three to five years. No compensation is required, as their labor is considered sufficient to defray the expense of instruction and support.

The establishment, which is required in this State, should be so far enlarged, as to include, besides a branch, like the superb institution of Fromont, farming in all its details, as applicable to our soil and climate, and a spacious Botanical Garden, scientifically arranged.

Each of these three Grand Divisions of the institution, to be under the management of well educated and practical professors, with able assistants, who are thoroughly acquainted with the theory and art, and capable of giving instruction and directing the labors of the several departments, in each of the chief divisions, and the whole to be under the control of a General Superintendent.

The means for carrying such a plan into successful operation, it is confidently believed, are immediately available,—for there is a spirit abroad among the people, as enlightened, patriotic and energetic, as the demand for such a movement is evident and imperious. By a union of the funds of the Massachusetts Agricultural and Horticultural Societies, and the Botanical Department of Harvard University, with the generous co-operation of the officers and members of these three institutions, as well as of the affluent, intelligent and liberal throughout the State, an establishment, of the character proposed, could be formed in the vicinity of Boston, which would do more to diffuse a knowledge of the science and art, and a taste for husbandry, gardening and botany, and to advance the general weal, than has been accomplished, or it is possible to effect, while each of those very valuable institutions is acting with limited means, and independent of the others.

There is a tract of land in Brookline, owned by the Hon. David Sears, and Ebenezer Francis, Esq., near the termination of the Western Avenue, where from one hundred and fifty to two hundred acres could be selected, remarkably well adapted for the various purposes of a spacious farm, and Horticultural and Botanical Gardens of Experiment. Its topographical features, and proximity to the capital, recommend it in preferen[illegible] with proper distance for the convenience of those persons who may be the most active in the foundation, and interested in the success of the establishment.

Is not such a project worthy of serious consideration?—and as a first step, is it not expedient that committees be appointed, by the Agricultural and Horticultural Societies above named, to deliberate on, and report what measures may be most effectual for accomplishing so desirable an object? Conferences could be held by those committees, with the officers of the University, as to the propriety of the plan, and if sanctioned by each of these institutions, a public meeting might be called, and all persons invited to attend who were disposed to aid in the undertaking. If prosecuted with zeal, there can be little doubt, that the legislature would afford generous encouragement. To what more appropriate purpose can an endowment in land be made, out of the vast tract, owned by the commonwealth in Maine? It will not only enhance the value of the cultivated land within our own borders, to an amount far beyond that for which the former may be sold; but add thousands of acres to the domain of agriculture, which are either untilled, or so very imperfectly as to afford but little more of subsistence than the wilderness, which it proposed to render tributary to the immediate wants and comforts, and the future prosperity of the whole people.

By experiments which have been made during the past year, it has been clearly shown, that large portions of the northeastern States are capable of yielding, with proper management, as bountiful crops, as those more naturally favored districts of the country, which have been significantly designated as the "Wheat growing regions" of the Union. If the Middle and Southern States seek, as fertilizing materials, the ashes of the East, and the gypsum of the British provinces,—and the farmers of England collect the bones, which are wastefully scattered over continental Europe, and even import them from this country, to enrich their lands, why should not Massachusetts make her distant possessions subservient to that intellectual cultivation, experience, and practical skill, which will render her soil as prolific, as that, from whence we annually receive such a vast amount of the first necessaries of life. Intelligence and practical skill can convert the most barren earth into luxuriant fields; and for the attainment of those indispensable prerequisites of good husbandry,—to accomplish an object so momentous, the State will not fail to afford the most ample assistance.

Industry, guided by genius and science, and aided by art, have triumphed over all the obstacles which impeded man in the march

of civilization; they have unveiled the wonders of astronomy, and the mysteries of chemistry,—explored the three vast realms of natural history,—embalmed and perpetuated the wisdom of ages in letters,—illustrated the splendors of architecture, sculpture and painting,—discovered and approximated empires by navigation,—founded, multiplied, and facilitated lines of intercommunication by the construction of canals and railways,—pressed into their service the mighty elements of fire and water, and bade them perform the office of the winds on the ocean, and furnish the motive power of transportation, and the hydraulic energies of the cataract on the land,—and now, their last and most splendid victories are to be achieved, for the benefit of the cultivator of the earth.

COLUMELLA.

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ART. III.— *The New York State Report "on Horticulture and the Household Arts, as intimately connected with the improvement of Agriculture."* By ALEXANDER WALSH, Esq., Chairman of the Committee.

(We have been favored by Mr Walsh with a copy of his interesting report — which will, we predict, be read with interest by all who desire to see our common farmers and others overcoming their depravity of taste with respect to horticulture. Who that has observed the indifference and utter neglect common in our country in relation to the subject before us, but would rejoice to see the proprietors of the soil awakening to the importance of ornamenting their grounds and supplying themselves with an abundance of luxurious fruits and vegetables, which we say is in the power of every individual who is in possession of an acre of land. The report of Mr Walsh is well calculated to forward these important improvements to such as will read.—ED.)

MR J. BRECK —

*Dear Sir*:— In the recent proceedings of the agricultural society of this state, you will find a report, on the subject of gardening and the household arts, as connected with agriculture, to which my name is attached. I would solicit your attention to the report; not as a specimen of fine composition, or one which does justice to the subject; but as the best I could do, under the limited circumstances of its production. Had I been at liberty as to time and space I might perhaps, have treated the subject in such a manner as, if not worthy

of your approval, might have met your eye with less need of apology.

You will consider, it was necessary to adapt the report to the taste of the farmers as they are, and not as we would wish them; and as we have good reason to hope, at no very distant day, time will make them. There are many men in the United States, who can appreciate all the advantages and relish all the beauties of scientfic Horticulture; but unfortunately such is the taste, or rather the want of it, in most of our agricultural community, that they are frightened, even at the language.

Should the report, with these remarks, merit an insertion in your most useful Register, I would wish its readers to understand, that it was intended for the latter class, with a view, simply to coax them into favor with the subject through the hope of profit, which is all that a majority of them can understand. Had it been designed for the farmer, I should have dwelt with delight on all the rich paraphernalia of that heaven taught art. I should have endeavored to treat, with becoming deference to those of better skill, on all the enchanting beauties of design and arrangement. I should have introduced the vine covered trellis, burdened with delicious clusters; the richly stored green-house; the cooling fountain; the breeze courting summer-house; the busts of interesting characters; the marble vase and urns; the bee-hive and sun-dial and appropriate mottoes; interspersed with fruit of every name and flavor, and with rare exotic plants, and our native choice gems gathered from the hills and valleys of our vast and prolific continent. And wherever nature has furnished the means, I would not have failed to make the rock a grotto and the brook a cataract, with bridges and other suitable displays of architecture.

But by committing the subject to your hands, I hope that the persuasive influence of your periodical, will awaken the unenlightened by degrees, to a true sense of their interest; while those of refined taste will no doubt continue to find it a source of pleasure and improvement.

Yours, respectfully,

ALEXANDER WALSH.

*Lansingburgh, Feb. 19th*, 1838.

The committee appointed to "inquire into the necessity and importance of an increased attention to Horticulture and the House-

hold Arts, as intimately connected with the improvement of Agriculture," beg leave to report —

That on investigating the subject in pursuance of the duty assigned them, they have become deeply impressed with a sense of its importance; and they regret that the necessary degree of brevity will only permit them to touch the mere outlines of some of the most prominent arguments which present themselves in its favor.

By the term horticulture, they understand that portion of agriculture which embraces the labors of the garden — the cultivation of vegetables, fruits, &c.

It is strange, as well as lamentable, that though this appears especially designed, by the Creator, as the first and most important employment of man, yet while every useful art is improving and perfecting by the light of science, this most valuable art should be left to grope in darkness — its value remaining unknown and unappreciated. All, therefore, that your committee can do is, to endeavor to awaken the public mind from the apathy under which it sleeps on the subject; to remove the strange prejudice which exists against it; and to open a way for the reception of those spontaneous rays of light which present themselves from luminous sources.

And here at the outset, your committee feel under peculiar embarrassments; for what arguments can be offered, to awaken to understanding the mind of him who can discover no profit, or receive no pleasure, from a well cultivated garden.

It is in vain that Infinite Wisdom has exerted its utmost skill in forming, perfuming and painting flowers to decorate his path, and sweeten the toils of life, if the same power has denied him a mind susceptible of the enjoyment. The depravity of public taste, with respect to gardening, has given currency to a common saying, that "good farmers seldom have good gardens," but never was a sentence more in opposition to the truth. It is so completely so, that if we look on even a remote corner of a farm, and see it well fenced and cultivated, we may almost rest assured that on visiting the dwelling of its owner, we shall find a neat, tasteful and well stocked farm garden. Indeed, so intimately connected are the moral and social virtues, with a taste for admiring aud improving the beauties of nature, that we can rarely find one without the other. There is, perhaps, no other earthly subject so well calculated to awaken and expand every faculty of the mind, and fill the soul with pleasing

admiration, as a garden of culinary plants, fruits and flowers, where art and science have done their duty in assisting nature.

Horticulture, both as an art and as a science, had undergone great improvements, in several countries in Europe; and it must be painfully mortifying to an American of patriotic feelings, who is acquainted with the subject, to see respectable foreigners, in passing through our country, notice the almost total neglect of this beautifying and moralizing branch of social economy.

The mode in which agriculture, if it can be so called, has hitherto been conducted, had its origin, no doubt, in the circumstances of the early settlers of our country. Those pioneers were not in situations to indulge refined taste; being only enabled by their utmost exertions to procure what would barely sustain life; and pecuniary necessity compelled them to cultivate such simple articles as they could dispose of, in mass, for immediate relief, and the state of society afforded no market for fruits or garden vegetables. This state of things established a distaste for any thing to gratify the eye or the palate, beyond bare necessity; and this distaste has continued with little improvement to the present time.

But a few among those engaged in agriculture, have discovered that, by rational improvements in the system, not only the same ground, with the same labor, might be made to double, and even quadruple its former productions; but that horticulture, tastefully and judiciously managed, is calculated to improve the mind, to excite and expand the intellectual faculties; and especially to increase wealth, at least as much as any other branch of agriculture.

The ancient prejudices against horticulture, are now beginning to be overcome, by the convincing evidence of successful results, and some of the more industrious and thinking farmers begin to see that a well selected assortment of choice fruit yields a greater profit, than perhaps any other crop from the same ground; that the choice new garden vegetables cost no more in the cultivation than the most coarse and common, while they add comfort and healthy variety to the table, and lessen the heavier expense of animal food. They begin in a few instances, to find that the value of a farm depends not so much upon the number of acres as upon its judicious mode of culture, and its productiveness. They see that a handsome and convenient, but not a large and extravagant dwelling, surrounded by fruit and ornamental trees, but more particularly a well-stocked

farm-house garden, not only increase their comforts and respectability, and even their wealth while in possession, but if they wish to sell, attracts the notice of purchasers and enhances the price.

Our forests abound with maple, elm, ash, and other elegantly formed ornamental shade trees, which we would recommend our agriculturists to plant along the road side, bordering their homesteads. They will thrive in almost any situation, and add beauty and value to their possessions and improve the general aspect of the country. "We never pass a tree which has been planted and nurtured by man, but we feel gratitude and respect towards the hand that did it." The cultivation of the Mulberry and the growth of timber, particularly live oak, locust and cedar, deserve the highest consideration; such trees being required, and commanding a high price for ship building, and in our growing manufactories.

In short, from the palace to the humblest cottage the business of horticulture, when carried to the perfection of which it is susceptible, appears to your committee, to be calculated, above all other branches of industry, to improve the mind and manners; to increase and multiply the comforts, and promote the wealth and respectability of the community.

We would therefore recommend to all, to use all justifiable exertions to excite a more general taste for horticulture, and to promote a more thorough and generally diffused knowledge of its principles and practice. To this end, we would recommend, that those who have any knowledge of the subject would communicate it to those who have none, and that more general attention should be paid to the various periodicals which are published and publishing on horticulture, and subjects connected with it — and they would also suggest that should the honorable legislature think proper to lend their aid to the subject, as they have done in some of the other states, much might be effected by their employing and paying some suitable person to write or compile a text book as a manual for the use of farmers and mechanics on horticulture and the household arts, and particularly on the subject of the growing of silk.

With respect to the "necessity and importance of the household arts," your committee are fully convinced, that, in the thriftiness, and good regulations and consequent happiness of society, as much depends on good housewifery as on good husbandry. It is a common saying, that "the man who would thrive must ask his wife."

These arts are not only more numerous and complicate, but susceptible of even greater improvements both from the aid of science and the dictates of common sense, than those which belong to the out-door economy; and they principally belong to the female department. The culinary arts alone embrace a more extensive and complicated system of knowledge than probably appertains to any one trade in the compass of the mechanic arts. On that system depends, not only our comfort and satisfaction in eating and drinking, and our health in the choice and preparation of food, but our prosperity in the economy of its management. The important business of the dairy depends almost entirely upon the skill of the housewife. But a few years ago they were the sole manufacturers of most of our clothing, and still a portion of it depends for its formation on their ingenuity and industry; even in the cottages of the poor, we may often admire the talents of the industrious housewife, where

> "The mither wi' her needle an' her shears,
> Gars ould clathes look amaist as well's the new."

But these important domestic arts, on which our comforts and prosperity so much depend, are too much neglected and despised. It is the duty, and ought to be the pride of every mother in America, to teach her daughters, first the most substantial and all important arts of good housewifery; and next to call forth and excite to action all their surplus ingenuity, diverting it into such channels as will elevate our national character, and by lessening dependence on foreign nations, promote independence of our own.

It is natural, and perhaps proper, for females to delight in finery; and to this end, nature has invested them with sprightly intellects to invent, and delicate fingers to construct it. But instead of availing themselves of these precious gifts of nature, our females generally appear to have almost wholly lost sight of, or never to have possessed a spark of that national pride which would prompt them to turn those talents to their own advantage. It would be deemed an insult to say that they have not as much inventive talent and refined taste as the females of France, and yet they appear to have cultivated a spirit of emulation to outdo each other in servile dependence on French fashions and French finery; (which fashions and finery do not arrive here, until cast off in France, so that the summer dresses of that country become the unsuitable dresses of

this,) until by extravagant importations of those articles, added to the immense amount paid for silk beyond our means, we have continued to plunge our country into a state of pecuniary distress, from which it will not soon be extricated. How much more independence should we display if our females would employ their leisure hours, and exert their ingenuity, in constructing ornamental dresses suited to our climate, according with their own refined taste, and let the French follow their own fashions, or servilely copy ours if they please.

Those of our young females who are destined to receive what is considered a polite education, are by the present national public taste, studiously kept ignorant of any thing which can contribute in the slightest degree to the future benefit of their families or themselves. Thus, in most of the more opulent families of the community, those important arts on which domestic comforts so greatly depend are left to the sole possession and management of domestics.

It is, therefore, of the highest importance, that females who are coming on the stage of action, should receive such education as should fit them in a greater degree for the important stations they are destined to fill. Without rejecting what are justly considered polite accomplishments, every female who is to become the head of a family, ought to have a thorough theoretic and practical knowledge of all the arts which appertain to cookery and systematic household arrangement. This knowledge would be greatly enhanced by an acquaitance with some of the natural sciences, particularly chemistry. Indeed, so important is a smattering of that branch of science, in every part of household economy, especially in the management of a dairy, that no female ought to be considered well educated without it.

But there is one branch of the household arts which your committee would strongly recommend.

By the aid of the labor saving inventions, females are relieved from a great and tedious part of their former labors, and they have consequently now a considerable portion of leisure.

There are many little household arts, by which they could manufacture little articles, which would command fair prices in market.

Many of these arts have been introduced by necessity in other

countries; and a little attention to the subject would render them sources of profit here.

There is one which we would earnestly recommend, as paramount to, and probably superceding the necessity of any other. This is growing and reeling of silk. This is, perhaps, as pleasing an employment as the human faculties can be engaged in. It is inseparably connected with a branch of horticulture, and will need some male assistance in cultivating the Mulberry trees, and erecting necessary fixtures. But the growing the silk is the appropriate work of women and children. It is periodical, leaving long intervals of rest; and the reeling is a light, easy and social employment, peculiarly calculated for delicate female fingers.

The profits arising from this business, will be equal, if not superior to those of any other branch connected with agriculture; and will need no other time devoted to it in the female department than is now devoted to leisure. It is now the heaviest item of our importations, and will find a sure market among ourselves, or will command a high price in return for its exportation.

Your committee, therefore, would most fervently urge that a proper attention to horticulture, effecting by art and science all the improvements of which it is susceptible, and similar attention to the household arts, as of the highest national importance, particularly the growing of silk, affording the surest guarantee to the independence and prosperity of our union.

Your committee would also strongly urge the importance of county Fairs, as one of the most efficient means of improving both agriculture and horticulture, and the household arts, by awakening ambition and exciting a spirit of emulation in both sexes. These Fairs would, as they have already done in many places, call forth new displays of ingenuity—choice products of the farm and of the garden, in needle work and miscellaneous subjects; and we think the legislature would do much to exalt the national character by appropriating a small fund to each county, that may have its rural society, for the support of such Fairs.

All of which is respectfully submitted.

ALEXANDER WALSH, *Chairman.*

## Art. IV.—*Blight in Pear, Apple and Quince Trees.*

There has been so much written, said and sung on this subject, that like the everlasting chess question, I can hardly think what I believe myself, and it seems from the intricacy of the cause, to be involved in the same impenetrable obscurity. Theory and speculation are about exhausted, and it is full twelve o'clock with the subject and high time that observation and examination took the place of both.

I have been grievously afflicted with the blight, particularly on pear trees; and really it is too bad to watch and nurse a pear tree, and to put up with their perversity in coming into bearing, and then not only to find the fruit blasted, but the tree dying, beyond the power of relief, or hopes of resuscitation.

Now what is the cause? In the name of St. Michael, St. Germain, and the melting Virgaleuse, will not the lovers of that best of all good fruits set their noddles to work on this doubtful question, and trace the disease from its incipient stage to its crisis, and set the world right on the subject beyond cavil or speculation.

This disease has had as many causes assigned for it as there are theories for the formation of the globe, and some of them as preposterous, and like Macbeth's witches, "come like shadows to depart."

*Electricity* at one time was indicted and found guilty of the crime, but I believe escaped punishment from being so subtle a customer.

*The tap root*, piercing the cold and ungenial soil downward to a redundancy of water, has been shrewdly suspected of the mischief.

*Too rich earth*, and highly manured soil, has also been suggested as one of the causes, whereby a *plethory* was produced, and more sap sent up than the leaves could elaborate, which becomes stagnant, and fermentation takes place.

*Disease of the leaf*, either by the slug or other insect, or by the honey dew, whereby the ability to elaborate the sap is destroyed, and the sap becomes unfit for circulation.

*Insects*, minute and animalcular, are also charged as the secret and invisible destroyers, who perforate the bark and lodge in the

cellular tissue, and destroy and sap the very vitals of life and health; but it requires a glass equal to the one used by the author of the celebrated *moon hoax* to discover them, and in my opinion like that affair, equally a fable.

Another cause was broached by Mr Goodsell, former editor of the Genesee Farmer, that it was a virus generated in the young fruit at the period of blossoming, or from some infection generated in a blasted fruit from some cause, and sent downward by the returning sap.

Now, Mr Editor, I will even give you my opinion, and as I don't charge anything for it, I trust you will have the complacency to say, thank you, sir — or, thank you kindly — I am not particular which.

Since the theory started by Mr Goodsell, I have been making observations on the progress of this disease, and have come to the conclusion that he is right; for I have never observed a tree to be affected with a blight, until it had arrived at the period of blossoming, and I have never known a blight to commence except where there was a blighted fruit, or where it was evident one had dropped. Now whether the virus is engendered by the vitiation of the sap in the young fruit, which may have been destroyed and rendered imperfect by cold winds, rain, or other causes; or whether the disease and cause of death is occasioned by some derangement of the pollen, by the absorption of some deleterious substance; or by the adventitious contact of the pollen of the blossoms of other trees, imparting a noxious impregnation; or by the disposition by some insect of its *ovum*, which in passing through its changes, destroys and poisons the fruit, is a moot point, which he that is able to lay his finger upon, will be entitled to be ranked as rather clever, and I ask of your readers to make observations on these points:— *Whether a tree is ever affected before it comes into bearing and sets fruit — and whether it does or does not always commence on a stem that has, or has had, a blighted fruit upon it?*

I am perfectly persuaded that the tapped root theory is *tapped too low*, for a fine lot of trees were blighted last summer, which grew on the high gravelly bank of the ridge road, in a situation where no reasonable tap root would ever think of looking for cold stagnant water.

Quince trees during the last year were generally affected more

or less, and many orchards of apple trees had many of their twigs singed.

It is an important inquiry, and worthy of the investigating acuteness of your most enlightened readers.—*Gen. Far.*

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## Art. III. — *On the Classes of Soils, and their Properties.*

The soil is the upper portion of the ground in which plants are produced. It forms a stratum of from a few inches to a foot or more, in depth. It is usually somewhat dark in color, arising from the mixing with it of the decomposed stems, leaves, and other parts of plants which had grown upon it, and in part, often by the presence of animal substances. It is this mixture of the substance of organic bodies, with the mineral matter of the upper stratum, which distinguishes this stratum from the subjacent mass of earth or rock, to which the term subsoil is applied. The decomposed organic portion of the soil may be termed *mould*; and it is the presence of mould, accordingly, which distinguishes the soil from the subsoil.

Soils are very various in their fertility and texture. With relation to the power of producing useful plants, they may be termed rich or poor; with relation to their texture, they may be termed stiff,— and free or light. The stiff soils are those which are tenacious and cohesive in their parts; the light or free soils are those which are of a looser texture, and whose parts are easily separated. But the cohesive soils pass into the loose by imperceptible gradations, and hence, though all soils may be termed rich or poor, stiff or light, they are so in every degree of fertility and texture.

All the soils which possess this tenacious or cohesive property in a considerable degree, are termed *clays*, or clayey soils; while all the looser soils are termed *light or free*. And all soils are more or less clayey, or more or less light, as they possess more or less of this tenacious and cohesive property, or of this looser texture.

The fertility of soils is, *cæteris paribus*, indicated by the greater or smaller proportion of mould which enters into their composition. When soils are thus naturally fertile, or are rendered permanently so by art, they are frequeutly termed *loams*: Thus, there are clayey

loams and sandy loams; and peat itself may, by the application of labor and art be converted into loam.

The parts of plants which grow upon the surface, and are mixed with the mineral matter of the soil, may decompose and become and mould. Under certain circumstances, however, the plants which have grown upon the surface do not decompose, but undergo a peculiar change, which fits them to resist decomposition. They are converted into peat, and the soils formed of this substance are termed *peaty*. The peaty soils are of the lighter class, and are distinguished from all others by peculiar characters.

Soils, then, may be distinguished from one another:—

1st. By their texture, in which case they may be divided into two classes,— 1st., the stiff, denominated clay, 2d., the light or free, comprehending the peaty.

2d. By their utility or power of producing useful plants, in which case they are termed rich or poor.

Soils, too, from particular causes, may be habitually wet or habitually dry. Soils, therefore, may be farther distinguished by their general relation to moisture. When water, from any cause is generally abundant, the soil may be termed wet; when there is habitual deficiency of water they may be termed dry.

Subsoils, it has been said, are distinguished from soils properly so termed, by the absence of mould. Plants in growing, may extend their roots into the subsoil, and decomposing there, be mixed with it. But this is in small quantity, and for the most part, the subsoil is readily distinguished by the eye, from the upper stratum or soil, by the absence of organic matter in a decomposed or decomposing state.

Subsoils may either consist of loose earthy matter like the soil, or they may consist of rock subsoils, therefore, may be divided into two classes, the rocky and the earthy.

When the soil rests directly upon, and extends to the rock, without any intervening matter, the soil will frequently be found to be similar in the composition of its mineral parts to the rock upon which it rests, from having been formed by the gradual disintegration of that rock. This is chiefly found to be the case with the soils of mountains; for, in plains, the soil is generally formed, not by the disintegration and decomposition of the rock upon which it rests,

but by the intermixing together of the disintegrated parts of different rocks and mineral strata.

The rocky subsoils consist of granite, sandstone, limestone, chalk, and the other mountain rocks of a country. They are sometimes easily penetrated by the water that falls upon the soil, and are then termed free or porus; and sometimes they resist the percolation of water, when they are termed close or retentive.

The earthly subsoils may, in like manner, be divided into the close or retentive, and the free or porous. The retentive are those which, from containing much clay, are tenacious and cohesive in their parts, and little pervious to fluids; the porous are those which, having less clay in the composition, are more readily permeable.

Whether the subsoil be retentive or porous, the soil which rests upon it should be of good depth. If the soil be shallow on a retentive subsoil, it is affected too greatly by the alterations of dryness and moisture. And if, again, a shallow soil rests on a porus subsoil, the moisture of the soil is too easily acted upon and exhausted by heat.

A subsoil, in so far as mere texture is concerned, should be neither too retentive or too porus. But although this intermediate condition is in most cases the best, yet in a very cold and moist country, a free porus subsoil is for the most part to be preferred to one which is close and retentive. The soil, besides being affected by the texture of the subsoil, is sometimes also affected by the nature of the mineral substances of which the subsoil is formed.

If the subsoil be rocky, it is desirable that it be calcareous rather than siliceous, chalk or limestone, for example, rather than quartz. Sometimes the subsoil contains matter which is directly injurious to the growth of plants. This matter is generally found to be the oxides of metals in combination with acids. Subsoils of this kind are usually distinguished by deepness of color.

Soils, then, it is seen, are affected in their properties, not only by their own texture and composition, but by the texture and composition of the subsoil; and they are divided into the stiff or clayey, and the light or free.

The clayey soils have as their distinguishing character the adhesiveness of their parts; and this property alone will enable even the inexperienced to discriminate them. A stiff clay, when dried either by natural or artificial heat, becomes so hard as to resist a considerable mechanical pressure. On account of the tenacity of such

soils, they are tilled with more difficulty than the freer soils. They require, to fertilize them, a larger proportion of manures; but they retain the effects of these manures for a longer time. They are better suited to the cultivation of plants with fibrous than with fleshy roots or tubes.

Soils of this class, as of every other, possess many degrees of natural fertility. The poor clays form, for the most part, an unprofitable soil, because, while their powers of production are inconsiderable, the expense of tilling them is large. The clay soils of this character are generally of little depth, and rest upon a retentive subsoil. The natural herbage they produce is coarse and little nutritious, and they are not well suited to the production of the cultivated grasses and other herbage plants. They are little fitted for the growth of turnips, or other plants with fleshy roots or tubers. Such sorts have every where local names which sufficiently denote their qualities. They are termed, by not an improper figure, *cold* soils; and sometimes they are classed under the general name *moor*, which term is often used to denote soils, whatever be their nature, of a low degree of fertility.

Very different in their value and nature are the richer clays. These bear weighty crops of the cultivated kinds of corn; they do not excel the better soils of other classes so greatly in the production of oats, and still less in that of barley, in which the lighter loams may surpass them; but they are unequalled for the production of wheat, and, in many places, derive their descriptive appellation from that circumstance, being termed *wheat* soils. They are well suited for the growth of the bean, a plant, with a weighty stem, and requiring a stiff soil to support it. They will yield large returns of the cultivated grasses, and leguminous herbage plants, though they are not so quickly covered with the natural herbage plants of the soil, when laid down to perennial pasturage, as the lighter soils.

Clays, like the other soils, approach to their most perfect condition as they advance to that state which has been termed loam. The effect of judicious tillage, and of the application of manures, is to improve the texture of such soils as well as to enrich them. Thus, clays in the neighborhood of cities become dark in their color, and less cohesive in their texture, from the mixture of animal and vegetable matter, and thence acquire the properties of the most valued soils of their class.

Natural changes, however, yet more than art, have furnished the rich soils of clay. The best, for the most part, of the soils of clay, are those which are formed from the alluvial deposits of rivers or the sea. The finest natural sorts of this and other countries, are those which are thus formed. The deposits of rivers, indeed, are not always of a clayey nature. In mountainous districts they generally form soils of the lighter kinds. Where the sea, however, is the agent, or where both the rivers and the tides combine their action, the deposits generally partake of the nature of clay. Such alluvial soils have every where local terms to mark their character and fertility. On the great rivers and estuaries in England, and in what are termed *carses* in Scotland, fine and extensive districts of this kind exist.

The next class of soils is the light or free. These are readily distinguished from the last by their smaller degree of tenacity. They are less suited for the production of wheat and beans than the clays, but they are better suited for the production of plants cultivated for their roots, as the turnip and potato.

This class of soils may be divided into two kinds or sub-classes, differing from each other in certain characters, but agreeing in the common property of being less tenacious in their parts than the clays.

The first of these sub-classes of the lighter soils has been termed the sandy.

The sandy soils are of all the degrees, from barrenness to fertility. When wholly without cohesion in their parts, they are altogether barren, and are only rendered productive by admixture of other substances. The cultivated sands part readily with their moisture on the application of heat. They do not become hard like the clays, and, making no considerable resistance to external pressure, they are tilled with little labor.

The poorer sands are almost always marked by the scantiness of their natural hedges. This character they possess in common with the poorer gravels. Other soils, even the poorest, may be thickly covered with the plants peculiar to them, but the poorer sands and gravels usually put forth their natural herbs with a sparingness which denotes the absence of vegetable nourishment.

But sand, without losing its distinctive character as a soil, may possess a greater cohesiveness in its particles, and be fertile by na-

ture, or rendered so by art; and then the soils denominated sandy, become of deserved estimation. Rich sands are early in maturing the cultivated plants, and thence they are familiarly termed kindly soils. They are fit for the production of every kind of herbage and grain. They yield to the richer clays in the power of producing wheat, but they surpass them in the production of rye and barley. They are well suited to the growth of the cultivated grasses; and when left in perennial pasture, they are quickly covered with the natural plants of the soil. But their distinguishing character is their peculiar adaptation to the raising of the plants cultivated for their roots and tubers.

The next division of the lighter soils, and allied in characters to the sandy, is the gravelly.

Sands will frequently be found to be the production of flat countries, gravels of the mountainous and rocky. The characteristic of the gravelly soils is the quantity of loose stones which they contain. These stones will be found to consist of those varieties of rock which the mountains of the country afford; and the nature of these rocks will frequently indicate the characters of the soil; thus soils, of which the stony matter is very siliceous, are generally found to be barren, while those of which it is calcareous, are found to be fertile.

Sands, upon examination, will be found to consist of small particles of stony matter, and thus sands may be said to differ from gravels only in the more minute divisions of their parts. Yet in this minuteness of division, there is generally sufficient to distinguish the two kinds of soil. The stony matter of the sand forms its principal component part, while the larger stones in the gravel, which give to it name and character, seem only to be mixed with the other necessary parts of the soil. The stone of the one has undergone a considerable mechanical division, while much of that of the other has only been loosened, in sensible masses, from its native bed. Any light soil, mixed with a sufficient portion of stones, is gravel, and gravel, therefore, is nothing else than the different kinds of light soil, mixed with a greater or less proportion of stones.

Gravels, like sands, have all the gradations of quality from fertility to barrenness. The loose soils of this nature, in which the undecomposed material is great, and the intervening soil siliceous, are held to be the worst of their kind. These are, in some places, termed *hungry* gravels, not only to denote their poverty, but their ten-

dency to devour, as it were, manure, without any corresponding nourishment to themselves. As the texture and quality of the intervening earth improves, so does the quality of the entire soil; and gravels, like sands and clays, advancing through all the intermediate degrees, may become at last of great fertility.

The rich gravels will produce all the cultivated kinds of grain. Their looser texture renders them less suited than the clays to the growth of wheat and beans; but they are admirably adapted to the growth of barley and oats. They are quick in their powers of producing vegetation; and from this quality, they are in some places termed *sharp* or quick soils. They readily admit of alternations of herbage and tillage, and improve in a state of perennial pasturage. They are generally trusty soils with regard to the quality of the grain which they yield; and in this respect they differ from many of the sands, in which the quality of the grain produced does not always accord with its early promise. It is well, then, even in the best sands, to see a tendency to gravel, which denotes a sharpness, as it is termed, in the soil. Gravels, like sands, are suited to the culture of the different kinds of plants raised for their roots and tubers; and they are in so peculiar a degree suited to the growth of turnips, that, in some parts, they receive the distinguishing appellation of *turnip* soils.

The last division of the lighter soils consist of those termed peaty. The matter of the soils of this class is dark in color, spongy in its texture, and full of the stems and other parts of plants, either entire or in a state of partial decay. It is generally tough and elastic; and when dried, loses greatly of its weight, and becomes inflammable. These, the most observable characteristics of the soil termed peaty, will distinguish them, in their natural state, from every other; and even when they shall have been greatly improved by culture, enough of their original characters will remain to make them known.

Peat, it has been said, consists of vegetable matter which has undergone a peculiar change. Under a degree of temperature not sufficiently great to decompose the plants that have sprung up upon the surface, these plants accumulate; and aided by a certain degree of humidity, are converted into peat, which is either found in strata upon the surface of plains, or accumulated in great beds on the tops and acclivities of mountains,or in valleys, hollows, and ravines. Suc-

cessive layers of plants being added to the mass, it continues to increase, under circumstances favorable to its production. Water is a necessary agent in its formation, and we may believe, too, a peculiar temperature, since it is only in the cold and temperate, and not in the warmer regions of the earth, that it is found to be produced. The plants which form it have not entirely decayed, but still retain their fibrous texture; and from the action of certain natural agents, have acquired properties altogether distinct from those which, in their former condition they were possessed of. They have now formed a spongy elastic inflammable body, and so different from the common matter of vegetables as to be highly antiseptic.

The plants whose progress towards decomposition has been thus arrested, are very various. Over the greater part of the surface of the primary and transition districts of colder countries, the peat is chiefly formed of mosses and other cryptogamic plants, mixed with the heaths and other plants which had grown along with it. Sometimes the peat has been found in swamps and lakes, and at other times the humidity of the climate has been sufficient to form it in one continued bed, covering the whole surface of the country.

Of the heaths which enter into the composition of peat, that hardy species the common ling, *Cailuna vulgaris*, is the native inhabitant of the alpine countries of northern Europe, and grows in vigor, and overspreads the surface,where hardly any of the larger plants would live. But although this and other species of heath are very generally converted into peat, this is not necessarily or universally so. By the growth and decay of the roots and stems, a soil is indeed formed; but then this may take place in the same manner as in other soils, and without the actual conversion of the upper stratum into peat. This, however, in the case of the cold and moist countries of the north of Europe, is comparatively rare, for generally the heaths, from the slowness of decomposition of their ligneous roots and stems, are wholly or partially converted into peat. In the cases in which these plants are not converted into peat, a dry and turfy soil is formed, different in aspect from that formed by the gramineous and other easily decomposed plants, but still produced in the same manner, though, like the peaty soils, elastic and inflamable, on account of the great quantity of ligneous matter in its composition. The soil itself is generally thin and little favorable to vegetation. It

usually rests upon a subsoil of siliceous sand, and sometimes chalk, and then it is comprehended under the class of soils termed light.

The soil formed of peat would, from its vegetable composition, seem to contain within it the necessary elements of fertility, and yet this is not to be found to be so. The excess of vegetable matter which it contains is injurious rather than useful. In this state of nature it is often found to be as barren as the sand of the desert, and scarcely to deserve the name of soil, until the labor of art has been extended to its improvement, and even then it is not entirely divested of its original character.

The effect of a thorough draining off of the water of peat, continued for a long time, is to carry away the antiseptic matter which it contains. When the water of peat has ceased to be turbid and comes off clear, then we have the assurance that the peat is freed of the principles injurious to vegetation. This is the greatest improvement of which peat is susceptible, and when we have brought it to this condition, the main difficulty of improving it has ceased.

Peat may then be brought to the state of what has been termed loam. In this ameliorated condition it becomes a soil of the lighter kind, well suited to the culture of the larger-rooted plants. It is dark in its color like the richest vegetable loam, and to the inexperienced eye may pass as such.— But still, unless greatly corrected in its texture by the application of the earths, it is found to be porous and loose, too quickly saturated with moisture, and too easily freed from it. In this improved condition it will yield bulky crops of oats and barley, although the quantity of the grain will not always correspond with the weight of the stem, nor the quality of the grain with its quantity.

Soils, then, we have seen, may be distinguished according to their texture and constitution, when they may be divided into two classes, — the stiff or strong, denominated clays,— the light or free subdivided into the Sandy, Gravelly, and Peaty ; and all these, again, may be distinguished,

1st — According to the powers of production, when they are termed Rich or Poor ; and

2nd — According to their habitual relation with respect to moisture, when they are termed Wet or Dry.

This simple nomenclature of soils is sufficiently intelligible to the practical farmer. The farmer chiefly regards soils with relation to

their fertility, and the means of cultivating them, and he naturally classifies them according to these views. A main distinction between soils, in practice, is founded upon their comparative productiveness, and this is the distinction which is most important with regard to mere value. We constantly refer to soils with reference to their good or bad qualities, without adverting to the particular circumstances which render them of good or bad quality. We speak familiarly, for example, of land worth 30s., 40s., and 50s. the acre, without considering whether it be a fertile clay, a fertile sand, or a highly improved peat. We speak of it with reference to its fertility and value alone. But those other distinctions, which are derived from its constitution and texture, are essential when we regard the manner of cultivating such a soil; for the same method of tillage, and the succession of crops, as will be afterwards seen, do not apply to all poor soils, but are determined by the character of the soil, as derived from its other properties.

Though soils are thus distinguished by external characters, they pass into each other by such gradations, that it is often difficult to say to what class they belong. These intermediate soils, too, are the most numerous class in all countries. The soils termed peaty, indeed, form a peculiar class, always marked by distinctive characters; but even these, when mixed with other substances, pass into the earthy soils, by imperceptible gradations. We may say, therefore, that the greater part of soil consists of an intermediate class, and that it is often difficult to bring them under any division, derived from their texture alone. Such soils, however, can always be distinguished by their powers of production. They are good, bad, or intermediate between good and bad; and their relative value is determined by the produce which, under similar circumstances they will yield.— *Low's Elements of Agriculture.*

## Art. VI.—*A Treatise on the Culture of Fruit.* By Pomona.

### General observations on the culture and management of fruits.

There are few individual branches of Horticulture, that are more deserving of a careful observation, than the culture of choice fruit; and it may be justly said, in many cases, that there are few subjects connected with the *science*, that are less generally known and practically understood, with an exception of a few individuals that have paid much attention, and made minute investigation into the natural propensities of *fruit trees*, who have in many cases not only realized every expectation, but in many ways received a compensation from their labors, of the most satisfactory nature.

Choice fruit of almost any kind, meets a pretty general demand in most of the markets in the Northern States; nor has there been any *lack* in planting, in most parts, to meet the general demand; however, a deficiency is apparent, which must be considered partly owing to mismanagement; and unless better modes are applied and strictly attended to, the deficiency will, in a few years, be severely *felt* in many parts of the Union.

In the first place, it will be seen that there is a general mismanagement in selecting the ground and location to be planted, which, by many persons is considered a subject requiring no consideration; when on the contrary, on it depends the principal chance of success. For, if the *soil* and *location* to be planted, is not well chosen, the best efforts of *culture* will be in a measure defeated, and the produce unsatisfactory. And hence, in many places, an *idea* prevails, that it is impossible to bring the desired kinds of fruit into a healthy growth and bearing; when the deficiency lies wholly in placing it in an unappropriate situation.

The most common error of this kind, may be seen in the apple orchard, and, although the fact is apparent to any intelligent observer, no exertion is taken to counteract it, by many persons who are engaged in planting orchards at the present time. The apple-tree flourishes well in almost all parts of the Northern States, when planted in a sheltered situation, as on the base of small hills and alluvials, in well sheltered valleys; especially if the soil is of a

rich, mellow, loamy nature, which is often to be found in such locations. The contrary location is that of unsheltered hills of a poor, gravelly nature, where the chilly northern winds have their power on the trees. It seldom happens that trees so located, either flourish, or bear good crops of fruit; the trees, both body and branches, are in such situations, blown all on one side; the limbs stunted, and the bark covered with *moss*, the true indication of poverty and stagnation. The fruit from the *former* is mostly *fine*, clean, and of a good flavor and produce; the *latter*, small, wormy, and of a meagre flavor and produce. The *Pear* thrives well on stiff, clayey soils, in a well sheltered situation. The *Plum* is more local in its nature than either the apple or pear; for it seldom is seen to flourish well, and fruit in any perfection, but in that of a low, moist situation, where the soil is naturally *rich*, or made so by adding plenty of manure to it; in such places the plum does well, in most parts of the Union. The cherry on the contrary to the above, will accommodate itself to almost any location, soil or aspect, in any part of the Northern States, (providing it is not winter killed, which is sometimes the case with tender kinds,) but side banks, and dry sandy bottoms are best adapted to its health and produce. Every fruit indeed, will be found to have a natural tendency to a peculiar soil and location, which I shall endeavor to describe under the different heads of culture, as I proceed.

A mismanagement is also often very apparent in planting trees, which in many cases is badly done, and is the result of retarding their growth when young, in a manner that they never fully expand into a full growth and vigor; and hence the cause of so many stunted trees, that are to be seen in almost every place and every where. In many cases, fruit trees are much crippled in their early stage of growth, by allowing them to bear a quantity of fruit, by which their *vigor* and *vital* principal is in a certain degree exhausted, and the tree never afterwards assumes that habit that it would have otherwise attained. To the above, may be added the general neglect of pruning and thinning the branches of trees, and regulating them in such a manner that the sap has a regular flow to all and every part of them, their leaves, fruit and the like.

Under the head of culture, one very essential consideration should always be borne in mind by the cultivator, namely, *that of planting in a proper manner*, which is often but little attended to or thought

of: *trees* are often planted in a careless manner, and are merely left to chance in culture, which is the very thing that should meet the most strict attention in young trees. There are indeed but few things that require more attention than a young plantation of fruit trees, which should be well worked among, and manured almost every season. The *reverse* is often seen by young thrifty trees being planted in an uncultivated piece of ground, and perhaps neither cultivated nor manured for some years after the first introduction, when *age*, in such cases, most times rather decreases than increases their size and habit. *It is in the infant state, that trees and plants of all kinds and denominations require the best of culture and nutriment, to expand their organs, and form a good habit; indeed, the first formation is the very essence of every other expectation that is to be realized in culture, either good or bad; therefore, the result will be in accordance to the first management.*

In closing this article, it will be proper to state, that it is intended as a text only, to what is to follow; the principal object of the treatise being to condense each separate part, under its individual head, in order to guard against repetition as much as possible;—therefore, the reader must not suspect the *use* of a quantity of paper, or number of words, to be the object of the author; but a short and plain manner of coming at once at the subjects hereafter to be treated upon. In my next article I shall endeavor to describe some useful hints on the different parts of a tree, and the different food and stimulants, and how they act on the vegetable system.

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## Art. VII.—*Forest Treasures of Honduras.* By C. Mackenzie.

At the first settlement of the town of Balize, and previously to the use of shingled roofs, the houses of all the settlers were covered with the leaves of the Palmetto tree, (the Chamœrops Excælsa;)—and from thence, these leaves obtained the name of Bay-thatch; they supply an excellent and durable defence against the weather, and are found particularly valuable for plantation buildings. The wood of this tree, likewise, is extensivly used for all building purposes, in the Honduras. The roads throughout the neighborhood of Balize, are profusely lined with a most agreeable variety of foliage;

of which that afforded by the stately Mangrove, (Rhirophora,) the Manchineel, (Heippomane Mancinella,) and the Poponax, is the most predominant. The deleterious qualities of the fruit of the fruit of the Manchineel are well known, as furnishing the deadly poison in which the Indians dip their darts and arrows. In the Honduras, however, it is believed that cattle do not experience any injury from eating it. It seems that the noxious qualities of this tree on the human economy, are intimately connected with the leaves and bark; for a soldier belonging to the 6th West India regiment, was, some years ago, completely deprived of the sight of one of his eyes by the accidental insinuation of some drops of rain which had fallen from the foliage of the Manchineel, whilst he was sleeping under its shade. The Poponax is a singularly beautiful and pleasant tree; exhaling the most delicate fragrance from its small yellow flowers. One of the species of Mimosa, or Sensitive Plant, is also lavishly diffused in every quarter.

Whoever has at all become acquainted with tropical countries must have viewed with peculiar delight the grateful profusion of fruits with which these are so bountifully furnished by an indulgent providence; the whole, or the greater portion at least, being so singularly adapted, from the exquisite flavor, taste, and other properties which they possess, to the necessities and even luxurious convenience of man. Amongst the choicest of these, which are abundantly obtained in the Honduras, may be enumerated Melons of several sorts; Pine-apples in equal variety; Oranges of superior flavor; Shaddocks, Mangoes; Guava Apples, Mammee, Cashew Apples, Tamarinds, Prickly-pears, Avocado-pears, Pomegranates, Wild Plums of many species, Sea-grapes, &c. It is, also, worthy of remark, that the Grape of Madeira was, some years ago, introduced into the Honduras, and that it is now completely familiarized to its change of situation, being in its produce, both luxuriant and abundant.

It may be observed here, that early attention was directed by the settlers at Honduras, towards the probable degree of success which might attend the culture of most of the vegetable productions peculiar to tropical situations; and the prospect of advantageous growth was materially encouraged by the acknowledged superiority of the climate and soil of this part of the South American continent; as well as from the circumstance of its being happily removed from the

discouraging inconvenience of frequent and continued droughts, so fatal to every agricultural attempt made in other parts; from which in deed, the greater nnmber of the West India Islands are not exempt.

The productions common to the islands in question, with a considerable variety of those more familiarly known to that part of the American continent comprehended within the tropics, are cultivated at the Honduras, with equal, if not superior success. The sugar cane, the most valuable of all, thrives with the richest luxuriance: indeed, previously to the vacation of the Mosquito shore by the English settlers, several sugar plantations had been formed on Black river; and the sugar and rum which they furnished, were very generally deemed, by the most competent judges, to be by no means inferior to the same articles from the island of Jamaica. Coffee, now become one of the most profitable articles of island culture, grows equally well. Cotton is by no means to be forgotten; there being many thriving plantations of this valuable tree in the Honduras. Indigo promises particularly to reward the labor of the cultivator; there being an inferior sort which is indigenous. Indian Arrowroot is abundantly produced; and Pimento has been for some time cultivated with the most encouraging profit.

Contiguous to the banks of the many rivers with which this country is so amply supplied, the lands would, without question, be found, from the extraordinary richness of the soil, to be exceedingly well adapted for the growth of rice; and the periodical rains would certainly be highly conducive to the perfection of this most useful grain. That which has been already produced for home consumption, in many situations, on the river Balize, in particular, has been considered, for goodness of quality, and quantity to the acre, in every respect equal to the finest rice from the States of America.

Although the foregoing are, doubtless, the most important vegetable productions, there are others which are scarcely *less* valuable, from the fact that they contribute more immediately to the relief of the wants of men and animals:—among these may be enumerated several varieties of Maise, or Indian Corn; Yams of various species; and the Cassava-root, of which a most palatable and wholesome bread is made by both settlers and natives. Until the Cassava has undergone a very particular mode of preparation, it is well known that it possesses most dangerous and even *poisonous* quali-

ties. Ulloa and others observe that it ought never to be used until the upper skin has been carefully stripped or scraped from the root; it is then to be grated and steeped in water, in order to free it from its acrid juice—the water being frequently changed. Byran Edwards, in his *History of the West Indies*, remarking on a passage from Dr Darwin, observes that Cassava, when made into bread, is rendered mild by the heat it undergoes in baking, rather than by the expression of its acrid juices;—both methods, however, are practised throughout South America, and the product is consequently one of the most wholesome and nutritious breads in the world.

But of all the vegetable products of Honduras, perhaps the best known substitute for bread is the Plantain, which flourishes so luxuriantly under the congenial influence of a tropical climate as scarcely to require the least labor or attention. Every settlement at Honduras has its Plaintain walk; and many of these comprehend an extent of one hundred acres; some much more; indeed, nothing can exceed the beauty and richness which the lengthened groves of these trees display, as the traveller pursues his journey up the course of the different rivers. The Pine-apple and Melon, being very generally interspersed between the rows of Plantains, contribute greatly to heighten the luxuriance of the scene; and the Mountain Cabbage, here and there rearing its lofty head far above the whole, adds no inconsiderable share of grandeur to the general effect.—*Gardener's Gazette.*

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## ART. VIII.—*Culture of Potatoes.*

HAVING had numerous applications for single Nos. of the Farmer from new subscribers, containg Gen. Barnum's account of the manner in which he has raised at the rate of 1000 bushels of potatoes per acre, we have concluded to republish it. We give in this number his directions for the preparation of the ground, planting, &c. and shall hereafter publish the directions for hoeing, harvesting, &c.

### PREPERATION FOR PLANTING.

Whatever soil may be selected for this purpose, to ensure a large

crop it should be highly manured with compost, decomposed vegetables, or barn-yard manure. The latter I consider preferable when it can be obtained with convenience; if raw or coarse be made use of, it should be spread immediately before the first ploughing, on the same day, to prevent the evaporation of its best qualities, which will rapidly depart if left exposed to the sun and atmosphere.

The first should be deep ploughing, and may be done as early as suits the convenience of the cultivator. If a stiff marl or clay soil, it would be well to have it ploughed late in the fall previous to planting. Where compost, or other substances not liable to fermentation, are intended as a manure, it is better the spreading should be omitted until just before the last ploughing, after which it should be thoroughly harrowed fine and smooth as possible; then take a narrow light cultivator, or small plough, calculated for turning a deep narrow furrow,— with this instrument lay your land in drills twenty inches asunder and four inches in depth, running north and south if practicable, to admit the rays of the sun to strike the plant equally on both sides; put into the bottom of the furrows or drills about two inches of well rotted barn-yard manure, or its equivalent — then drop your potatoes. If of the common size, or what is more important, that they contain about the usual quantity of eyes, (if more, they should be cut, to prevent too many stalks shooting up together,) put a single potato in the drills or trenches ten inches apart; the first should remain uncovered until the second one is deposited, to place them diagonally in the drills, which will afford more space between the potatoes one way than if laid at right angles in the rows. The covering may be performed with a hoe, first hauling in the furrow raised on each side of the drill; then carefully take from the centre of the space the soil to finish the covering to the depth of 3 1-2 or 4 inches. By taking the earth from the centre of the space on either side to the width of 3 inches, it will leave a drain of 6 inches in the centre of the space, and a hill of 14 inches in width, gently descending from the drill to the drain; the width and depth of the drill will be sufficient to protect the plant against any injurious effects of a scorching sun or drenching rain. The drains in the centre will at all times be found sufficient to admit the surplus water to pass off. I am not at all tenacious about the instrument to be made use of for opening the trenches to receive the

manure and potatoes ; this work should be well done, and may be performed with a common hoe with much uniformity and accuracy, by stretching a line to direct the operation. It is true that the labor cannot be performed with the same facility as with a horse, but it can be better done, and I think at less expense, taking into consideration the labor of the man to hold, the boy to ride, and the horse to draw the machine.

SEASON FOR PLANTING.

In this respect they are a most accommodating crop, allowing the farmer in the southern and central part of the designated district 20 or 30 days to perform the operation. The particular time depends in a very considerable degree upon the climate. In the region of my residence, (the 44th degree of North Latitude,) they may be planted from the 10th of May to the 15th of June. At the extreme north of the described limits less latitude is afforded for seed time and harvest. The good husbandman in that climate should make all practicable preparation for his crop in the fall, and plant as early in the spring as the ground is sufficiently dry and warm. Here the growth is extremely rapid, not requiring more than 90 to 110 days to perfect it. The quantity will not be quite so great as with us, but superior in quality.— *Gen. Far.*

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## ART. IX.—*Miscellaneous Matters.*

ELEMENTS OF PRACTICAL AGRICULTURE.—*By D. Low, Esq.*— We see no greater proof of the general advancement of science than the publication of works connected with it, and the volume before us, is among the first class productions on the science of agriculture. Few gardeners are there, who do not more or less practice in that branch of cultivation which belongs to the farmer ; but if this were not the case, the rules for general cultivation are so good, the observations upon soils so numerous, and general crops so excellent, that the work is invaluable. It is, to use the words of a contemporary "as useful to the gardener as the farmer;" and the article quoted in another part of our paper, will illustrate and confirm this opinion.—*Gardener's Gazette.*

A Royal Bouquet.—Mrs Lawrence had the honor of presenting to Her Majesty, a few days since, (says the London Gardener's Gazette of Dec. 9,) a most beautiful Bouquet, which, perhaps, for rarity and beauty, was never equalled in this country, more especially considering the season of the year. For the satisfaction of such of our readers as may be anxious to know what may be produced, even in December, we subjoin an account of the contents, which we know to be correct.

Oncidium Papillio
——— Crispum
——— Bifolium
——— Divaricatum
——— Leucaultia
Zygopetalum Mackaii
——— var. Pallida
——— Crinitum Ceruleum
——— Chortelease
——— Humilie
Calanthe Densiflora
Maxillaria Picta
——— New Species
——— Aromatica
——— Stapelloides
Dendrobrium Moniliforme
——— Cuprium
——— Nobilis
——— Guttatum
——— Alatum
Cycrioclus Ventricosum
——— Specicosa Nova
Epidendrium Umbellatum
——— Rosea
Bletia Hyacinthoides
——— Speciosa Nova
Euphorbia Poinsetta
——— Splendens
——— Jacquiniflora, or Fulgida
——— Punicea
Ipomea Horsfalii
——— Pentaultus
——— Rubro Cerulea
Lælia Anceps
Læelia Grandiflora
Passiflora Byloba
——— Racemosa
——— Kermesina
——— Rosea
——— Nova Specicosa
——— Capensis
Columnea Scandens
Jasminum Album Hirsutum
——— Nova Specicosa
Russelia Juncea
Gesneria Oblongata
——— New Chilian Species
Gysomeria Oblongata
——— Longiflorea
Corea Speciosa
—— Milneri
Chorizema Nova Speciosa
Begonia Umbellata
——— Rosea
Silago New Species
Polygala Grandiflora
——— Oppositifolia
——— Hirsuta
——— Speciosa
Lechenaultia Formosa
——— Obletia
Erica Walkerii
——— Jasminiflora
——— Cerinthoides Superba
——— Pulchella
——— Odora Rosea
——— Picta
——— Princeps

## QUINCY MARKET.

[Reported for the Horticultural Register.]

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| APPLES, Russet, | barrel, | 2 00 | to | 2 50 | bushel, | 1 00 | 1 50 |
| Baldwins, | do. | 2 00 | | 2 50 | do. | 1 25 | 1 50 |
| Golded Pippin | | | | | do. | 1 50 | |
| Common, | | | | | do. | 75 | 1 25 |
| BEANS, White | | | | | do. | 2 00 | 2 25 |
| BEETS, | | | | | do. | 50 | 75 |
| CABBAGES, | | | | | dozen | 50 | 75 |
| CARROTS, | | | | | bushel | 50 | 75 |
| CELERY, | | | | | root | 6 | 10 |
| CRANBERRIES, | | | | | bushel, | 2 00 | 2 25 |
| GRAPES, Malaga, | | | | | pound | 25 | 37 |
| HORSE RADISH, | | | | | pound | 8 | 11 |
| LEMONS, | | | | | dozen | 20 | 25 |
| LETTUCE, | | | | | head | 10 | 12 |
| NUTS, Almonds, (Soft shelled) | | | | | pound | 7 | 8 |
| (Hard) | | | | | do. | 4 | 5 |
| Filberts | | | | | do. | 4 | 5 |
| English Walnuts | | | | | do. | 5 | 7 |
| Castana, | | | | | do. | 3 | 5 |
| Pea Nuts, | | | | | bushel | 1 25 | 1 50 |
| Shagbarks, | | | | | do. | 2 00 | 3 00 |
| Chestnuts, | | | | | do. | 5 00 | 5 50 |
| ORANGES, | | | | | dozen | 37 | 50 |
| ONIONS, | bunch, | 4 a 6 | | | bushel | 1 25 | 1 50 |
| PARSNIPS, | | | | | do. | 75 | 1 00 |
| PARSLEY, | | | | | half peck | 25 | |
| PEARS, (Baking,) | | | | | bushel, | 2 00 | 3 00 |
| POTATOES, common, | bushel, | 40 | | 50 | barrel | 1 00 | 1 25 |
| Chenangoes, | do. | 37½ | | 50 | do. | 1 25 | 1 50 |
| Eastport, | do. | 1 00 | | | do. | 2 00 | 2 25 |
| SQUASHES, various sorts, | | | | | pound | 4 | 6 |
| SAGE, | | | | | do. | 20 | 25 |
| TURNIPS, | | | | | bushel | 50 | 75 |

*Boston, March* 2, 1838.